STATE OF MAINE
DEPARTMENT OF CONSERVATION
STATE HOUSE STATION 22
AUGUSTA, MAINE 04333

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Melvyn J. Weiss, Field Representative
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Northeastern Forest Experiment Station
Box 640
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Dear Mel:

We have pulled together the enclosed summary of pest conditions in Maine for the 1983 season as you requested. As in the past we have not included the gypsy moth and spruce budworm for which you should already have detailed information. As you will soon see, our pest problems have kept us busy. Although some such as the gypsy moth and forest tent caterpillar declined in severity over the period, others such as the bruce spanworm picked up the slack.

For most of the major problems for 1983 we have provided summaries in the form which you requested. Each year, however, there are other more chronic problems which we feel also deserve a mention to insure continuity. These we have simply summarized under miscellaneous insect and disease conditions. Should you desire publications listings for the period we could also supply this as well.

I hope that you find the enclosed information useful in compiling your report. If you have further questions, please feel free to contact me at any time. Sorry for the delay.

Sincerely,

Clark A. Granger
State Forest Entomologist

CAG:bab
Enclosures

Miscellaneous Insect Condition Summaries for Maine

for the 1983 Season

Balsam Gall Midge, *Paradiplosis tumifex* - This problem in Christmas tree plantations continued to be spotty. While locally heavy in some plantations it was nearly absent from others. In general the problem was at about 1982 levels.

Balsam Twig Aphid, *Mindarus abietinus* - This insect seemed to occur somewhat more frequently than in 1982 but was still spotty in nature.

Birch Leafminer (several species) - For about the third year, leafminer populations remained at relatively low levels during 1983. This was not true of the casebearer, summarized elsewhere.

Birch Mortality - Late in the 1983 field season it was brought to our attention that fairly extensive birch mortality was in evidence throughout much of Washington and eastern Hancock Counties in eastern Maine. Many of the affected stands were surveyed to determine the cause and extent. White birch seemed to be affected most. Trees showing symptoms of decline averaged about 75 years of age occurring in discrete stands intermixed with softwood. Although many trees were currently showing decline symptoms (dead tops, etc.), others had died over a 10 year span.

Physiological maturity and growth stress of these trees had resulted in low vigor with minimal radial growth over the past few years. This then predisposed the trees to shoestring root rot and bronze birch borer which brought or was bringing some of the trees down. The bronze birch borer was not found infesting all of the trees involved while shoestring root rot was present in all dead birch. As many as 20% of the birch were dead on some sites with up to 40% dead and moribund.

Browntail Moth, *Euproctis chrysorrhaea* - Overwintering webs of the browntail moth caterpillars were still present and clipped on House (337) and Vail (1,414) Islands in the Casco Bay area when checked on April 8. Seguin Island near Phippsburg was checked on March 31 and 28 webs were clipped. Vail Island was visited again on November 1 when approximately 1,700 more webs were removed.

Fall Cankerworm, *Alsophila pometaria* - Populations of this insect were down again generally in 1983 except for some local hot spots along the coast from Portland south and west. The trend is expected to continue downward in 1984.

Fall Webworm, *Hyphantria cunea* - Although present in low numbers throughout southern Maine in 1983, defoliation by this pest was again barely detectable. The low populations are expected to continue.

Green-striped Mapleworm, *Anisota rubicunda* - Defoliation by this pest remained low in 1983 although moths were again common in light traps.

Larch Casebearer, *Coleophora laricella* - Populations of this insect remained generally low again in 1983 although we noted more hot spots of moderate feeding than in 1982.

Larch Sawfly, *Pristiphora erichsonii* - The larch sawfly continues to remain very low in numbers statewide.

Oak leafrollers and tiers - Populations of this complex of species continued their decline in 1983. Oak foliage was the best in many years over much of southern Maine.

Oak mortality was fairly heavy in scattered oak stands in central Lincoln County during 1983. As high as 50% of the oak in some stands were dead or dying. While shoestring root rot seemed to be responsible for the mortality and was present in all dead trees checked, the trees seemed to have been predisposed by poor site (ledgy), possibly drought in the recent past and a long history of defoliation by leaf tiers and rollers. Surprising, however, was the fact that many trees had visibly good form and vigor up to the time of death.

Oblique-banded Leaf Roller, *Choristoneura rosaceana* - Larvae of this species seemed to be much more common in 1983 than usual especially on poplars and birches where damage was often noticeable.

Spruce Budmoth, *Zeiraphera canadensis* - Damage caused by this pest was visible on white spruce statewide in 1983 but was especially heavy in plantations in northern Maine. Although this species (formerly considered *Z. ratzeburgiana* by many) has been known as an aesthetic problem on ornamental white spruce in coastal areas from Penobscot Bay westward for many years, it has only been within the past two to three years that severe plantation damage has become fairly widespread.

Spruce Coneworm, *Dioryctria reniculelloides* - Damage caused by the feeding of this species to residual spruce trees in northern Maine continued to stimulate concern. Although the species seems to be able to survive some treatment methods used for budworm, it seems to succumb to others. Although populations in 1983 seemed to be down somewhat, they are still of concern.

White Pine Weevil, *Pissodes strobi* - This perennial problem on white pine in Maine seemed to be more noticeable in 1983 than in 1982. It would be difficult to say for sure whether or not populations are up even though this seems to be the case.

Yellow-headed Spruce Sawfly, *Pikonema alaskensis* - Although defoliation by this pest in 1983 was minimal, numbers generally seemed to be on the rise.

1983 Pest Conditions Report - Maine

MISCELLANEOUS DISEASES

Larch Decline (Cause undetermined) - Isolated trees or small clumps of trees in the mature age class start to develop yellow needles in mid-summer and are completely dead and devoid of needles shortly thereafter. *Armillariella = Armillaria mellea* and the eastern larch beetle cause the eventual mortality; however, the predisposing factor(s) is/are not known. Wedges taken from declining native larch in the southern 1/2 of the State were examined for presence of the pine wood nematode with negative results.

Pinewood Nematode (*Bursaphelenchus xylophilus = B. lignicolus*) - A survey for presence of the pinewood nematode from declining larch produced negative results. Other nematode species have been isolated, however, and all have been sent to Dr. Dale Bergdahl, University of Vermont who kindly offered to examine any specimens we isolated.

White Pine Decline - Browning of current year's needles occurred on scattered individual trees or in small groups throughout the southern 1/2 of the State, except along the immediate coast. Although concentrations of ozone were not reported to reach threshold levels that would produce the above symptoms, according to a Department of Environmental Protection meteorologist, levels were much higher than those of last year and there was virtually no wind for extended periods except in coastal areas. Thus little mixing of the air mass occurred. Also, when ozone mixes with low levels of other air pollutants, a catalytic reaction is produced which causes greater damage than that produced by the pollutants individually. This, combined with limited air movement, may be the reason such striking needle blight symptoms were observed this year.

Fir-Fern Rust (*Uredinopsis mirabilis*) - This is the most commonly identified rust species on balsam fir, and is most commonly found on its alternate host species, the sensitive and interrupted fern. Roundup evidently will kill the fern host, but Asulox is reported to be cheaper and safer to use around developing fir foliage. This rust seldom affects quality/market-ability of trees growing more than 25 yards from the fern host. Infection was present generally in varying degrees where the two hosts occur in close proximity.

Sulphur Conk or Chicken Fungus (*Polyporus sulphureus*) - An extremely large fructification of this fungus was produced along a seam on a large red oak in Turner, and extended up the bole from groundline for approximately 16 feet.

Lophodermium Needle Cast (*Lophodermium pinastri*) - Scotch pine Christmas tree plantations in Nobleboro and Haynesville contained light-to-medium infestations in the spring of the year on 1982 foliage. The problem which existed at the State Nursery in the spring of 1982 has been controlled. Four pine species (Scotch, red jack, and Austrian) taken from infected beds graded hard and outplanted in the spring of 1982 without any cultural treatment e.g. spraying, mowing, are doing well and appear healthy at this time.

Dwarf Mistletoe (*Arceuthobium pusillum*) - Affected black spruce in Aurora suffered mortality in the smaller size classes.

Sirococcus Shoot Blight (*Sirococcus strobilinus*) - On mature and understory natural red pine in the Cathedral Pines area, Eustis, and on sapling-pole-sized trees at T19 MD. No mortality; light to moderate infestations.

Botrytis Seedling Blight (*Botrytis* sp.) - Heavy damage occurred to frozen, winter-stored white spruce seedlings which resulted from an inadequate air space in the center of the large packing crates. Rapid freezing of seedlings in the center of the crate when initially stored did not occur and a heavy buildup of *Botrytis* resulted.

Hawthorn Leaf Blight (*Entomosporium maculatum*) - Heavy leaf infection and premature leaf drop resulted on susceptible cultivated hawthorn species in Lewiston.

Swiss Needle Cast (*Phaeocryptopus* = *Adelopus gaumannii*) - This disease occurred for the second year in Nobleboro and was noted for the first time in Sangerville. This needle cast of Douglas-fir is increasing in range and intensity, and makes future establishment of this as a Christmas tree species a highly questionable venture.

Red Maple Decline - Individual scattered trees have produced such heavy seed crops that seed bearing branches are thinly foliated with smaller- than - normal foliage. This phenomenon has occurred for several successive years, and may at least be a contributing factor to the decline condition. Speculation suggests that acid precipitation may also be incriminated.

Undetermined Larch Needle Cast - Symptoms similar to those on a Mycosphaerella "Pest Alert" were observed on European Larch in Bingham. The causal organism has not been identified.

Western Gall Rust (*Endocronartium harknessii*) - Scotch pine in Bingham, first observed to be infected about 20 years ago, are still producing live galls. A one acre Scotch pine plantation in T19 MD with this disease was sanitized (trees felled) by Georgia-Pacific personnel. Porcupine-damaged trees in this same plantation were also removed.

Nectria Canker (*Nectria galligena*) - Several well-developed cankers on major branches of scattered white birch in the Coburn Gore area were contributing to a dieback condition. Armillaria root rot was also a contributing factor on some of the symptomatic trees that had a past history of defoliation caused by the birch casebearer.

Chestnut Blight (*Endothia parasitica*) - New cankers were developing on previously healthy mature American chestnuts in the Harkness Preserve, Rockport. An unsubstantiated report of control through use of a plaster mud pack comprised of soil from around the root system came to my attention. Trees at the Augusta Lab remain healthy and again produced a crop of nuts this year.

1983 PEST CONDITIONS REPORT WORK SHEET (MAINE)

PEST: (COMMON NAME) Annosus Root Rot
(SPECIFIC NAME) *Heterobasidion annosum = Fomes annosus*

HOST: Red pine, white pine, Norway spruce

PRESENT CONDITION: Almost exclusively in Central and Southern Maine thinned plantations lacking stump treatment.

AREA: 17 Townships

LOCATION: Auburn, Dexter, Dover-Foxcroft, Farmington, Lincoln, Livermore, Mechanic Falls, Newcastle, New Portland, Parsonsfield, Phillips, Sanford, Skowhegan, Standish, Wells, Windham, Raymond.

SEVERITY: (SPECIFIC MEASUREMENTS OR ESTIMATES)
Three new sites in 1983; two in Farmington and one in Newcastle.

LOSSES: (BEST ESTIMATES OF VOLUME AND/OR $) About 5 cords this year.

TREND: Increasing

PAST TO PRESENT: Increasing as plantations reach age in need of thinning. Stump treatment not 100% accepted.

FUTURE: Expect a leveling-off in incidence when potential of impact on resource and disruption of management plans is better understood.

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, RESULTS) Stump treatment with Borax at time of felling is recommended and believed the overall best treatment.

COMMENTS: An increasing problem of incompletely understood proportions possibly exists in mechanical shearing operations for biomass production; e.g. boiler fuel to power mills such as S.D. Warren. The mechanics for application of stump treatment in such operations currently is not available, or is a severe safety risk.

STATUS OF FOMES ROOT ROT - OCT., 1983

TOWNSHIP	SPECIES	STAND TYPE
Auburn	R	P
Dexter	R	P
Dover-Foxcroft	R	P
*Farmington	R	P
Lincoln	W	N
Livermore	R	P
Mechanic Falls	R,W	P
*Newcastle	R	P
New Portland	R	P
Parsonsfield	R,W	P
Phillips	N	P
Sanford	R	P
Skowhegan	W	P
Standish	R,W	P
Wells	R	N
Windham-Raymond	N	P

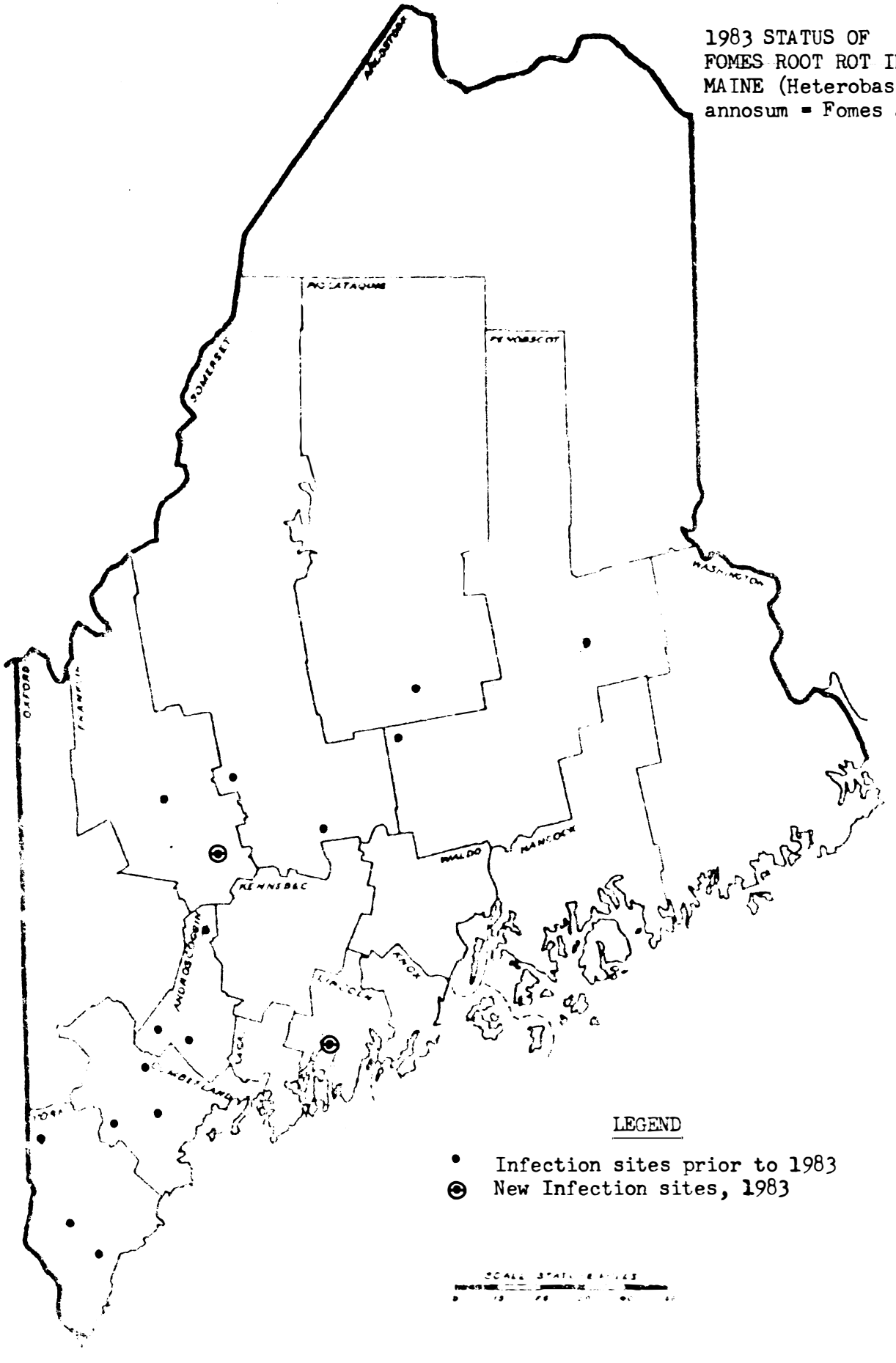
LEGEND

N = Norway Spruce
R = Red Pine
W = White Pine

N = Natural
P = Plantation

* New records in 1983

MAINE


1983 STATUS OF
FOMES ROOT ROT IN
MAINE (Heterobasidion
annosum = Fomes annosus)
SOMERSET
PENOBSCOT
WASHINGTON
OXFORD
KENNEBEC
HANCOCK
LINCOLN
KNOX
WALDO
LEGEND
Infection sites prior to 1983
New Infection sites, 1983

1983 PEST CONDITIONS REPORT WORK SHEET (MAINE)

PEST: (COMMON NAME) Ash Leaf Rust
(SPECIFIC NAME) *Puccinia sparganioides*

HOST: White and Green Ash

PRESENT CONDITION: Coastal York Co. eastward to western Hancock Co.

AREA: Several thousand acres of the species in forest stands. The largest impact is on shade tree specimens.

LOCATION: Kittery and Eliot eastward along the coast to Bucksport and up to 25 miles inland in some areas; especially along the Saco, Androscoggin, and Kennebec River Valleys.

SEVERITY: (SPECIFIC MEASUREMENTS OR ESTIMATES) Complete defoliation in many areas with some possible heavy limb mortality.

LOSSES: (BEST ESTIMATES OF VOLUME AND/OR $) Difficult to evaluate since epicormic sprouting has occurred on many leafless trees initially thought to be dead. Some premature felling occurring.

TREND: Building.

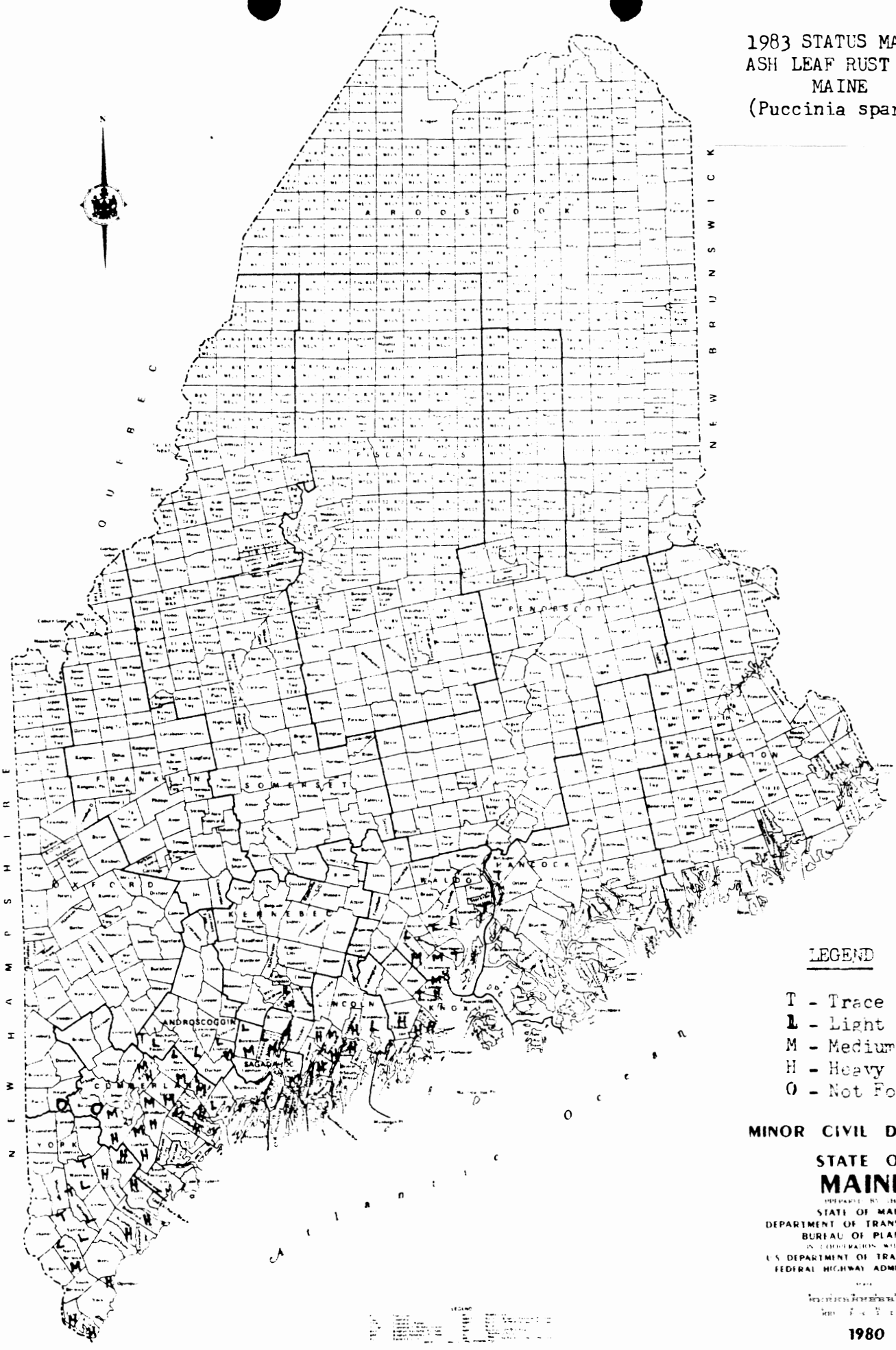
PAST TO PRESENT: Epidemics in mid-50's, very early 70's and the present epidemic which started building in the spring of 1981.

FUTURE: Heavy inoculum is present on the alternate host, *Spartina* spp. (salt and fresh water marsh or cord grass). Another wet spring in 1984 could result in heavy infection of ash.

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, RESULTS) None

COMMENTS: The ash in the coastal area from Belfast south has sustained one year of light-medium infestation and two successive years of medium-heavy and heavy attack. Associated with the rust attack was moderate to heavy attack by ash anthracnose. Conditions which favor heavy infection by the rust also favors infection by anthracnose.

1983 STATUS MAP OF ASH LEAF RUST IN MAINE (Puccinia sparganoides)



LEGEND

T - Trace
L - Light
M - Medium
H - Heavy
O - Not Found

MINOR CIVIL DIVISIONS

STATE OF
MAINE

PREPARED BY THE
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BUREAU OF PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

1980

1983 PEST CONDITIONS REPORT WORK SHEET (MAINE)

PEST: (COMMON NAME) European Larch Canker
(SPECIFIC NAME) *Lachnellula = Dasyscypha willkommii*

HOST: Eastern Larch (*Larix laricina*)

PRESENT CONDITION: Coastal in Washington County

AREA: 17 Townships

LOCATION: Cherryfield, Steuben, Harrington, Columbia Falls, Addison, Jonesport, Jonesboro, Beals, Roque Bluffs, Whitneyville, Machiasport, Cutler, Trescott, Edmunds, Lubec, Machias, and Whiting.

SEVERITY: (SPECIFIC MEASUREMENTS OR ESTIMATES) In the Jonesboro area, understory pole-sized trees have already been killed. In Cutler, pole-sized and saplings are being killed.

LOSSES: (BEST ESTIMATES OF VOLUME AND/OR $) In the two above "worst case" examples, an estimated 2 to 3 cords have been lost; however, in areas where only heavy branch attack occurs, growth loss (unmeasured) is also occurring.

TREND: Increasing

PAST TO PRESENT: The oldest cankers appear to be approximately 13 years old. Spread appears to have been fairly rapid over this period to encompass the present 17 town infestation.

FUTURE: Spread is expected to be minimal since the disease already occupies areas of greatest larch concentration. As the larch becomes more dispersed away from the coast, spread rate is expected to decrease.

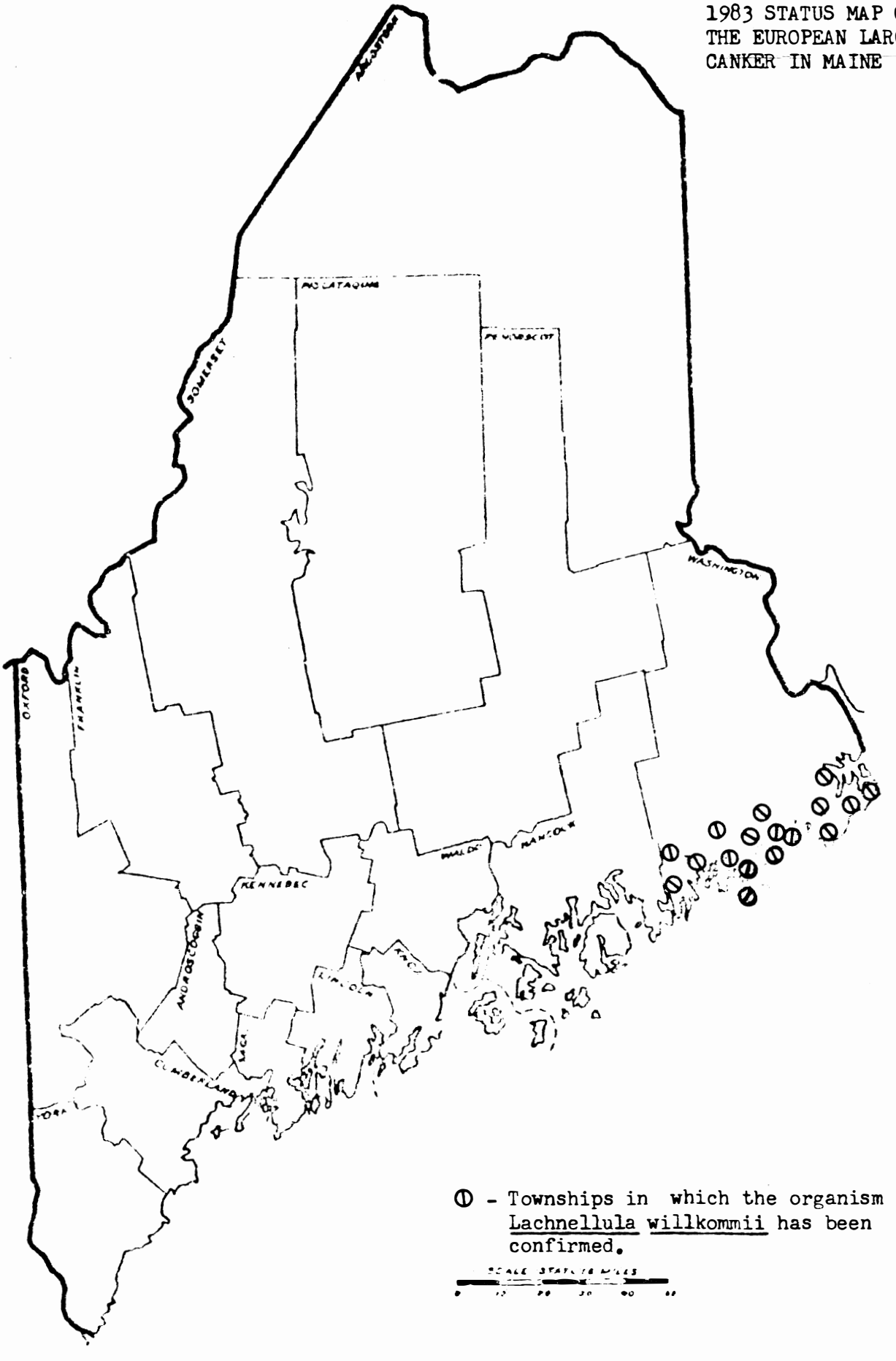
CONTROL PROJECTS (METHOD, MATERIAL, ACRES, RESULTS) No practical, economically feasible control methods have been developed. Georgia-Pacific Corp. is planting a resistant species.

COMMENTS: The saprophytic ascomycete *Lachnellula occidentalis* is sometimes found associated with *L. willkommii* on finer twigs.

A parallel quarantine (APHIS-State of Maine) is being formulated.

An undetermined pathogen or organism causes a circumfrential constriction on branches. The bark in the constricted area is dead, and results in greater twig diameter growth at the terminal end of the constriction than at the stem end. Pitching and flagging, similar to that caused by the European larch canker, confuses survey effort.

MAINE


1983 STATUS MAP OF
THE EUROPEAN LARCH
CANKER IN MAINE
AROOSTOOK
PISCATAQUIS
PENOBSCOT
SOMERSET
WASHINGTON
OXFORD
FRANKLIN
KENNEBEC
HANCOCK
WALDO
ANDROSCOGGIN
CUMBERLAND
YORK
- Townships in which the organism Lachnellula willkommii has been confirmed.

1983 PEST CONDITIONS REPORT WORK SHEET (MAINE)

PEST: (COMMON NAME) Rhabdocline Needle Cast
(SPECIFIC NAME) *Rhabdocline pseudotsugae*

HOST: Douglas-fir

PRESENT CONDITION: Few plantations unaffected

AREA: 25+ acres

LOCATION: Mostly in Central, Western, and Southern Maine; virtually wherever Douglas-fir plantations exist.

SEVERITY: (SPECIFIC MEASUREMENTS OR ESTIMATES) Severe to unaffected, depending on degree of resistance.

LOSSES: (BEST ESTIMATES OF VOLUME AND/OR $) An estimated 1000 moderately-to-severely affected trees lost from the Christmas tree market. At $9/tree = $9,000.

TREND: Increasing

PAST TO PRESENT: An increasing number of plantations with moderate-to-severely affected trees.

FUTURE: Unless a strain resistant to both Rhabdocline and Swiss Needle Cast is developed, I am discouraging planting of this species. Douglas fir has little future in the Christmas tree trade otherwise.

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, RESULTS) Sprayed with Daconil 2787-F in Nobleboro with an improvement noted. (Mistblower application)

COMMENTS: Best unsprayed trees appear to be situated on south-facing slopes with little or no competing vegetation due to natural conditions or mowing; i.e. good drying and air circulation. There appeared to be least improvement from spray application in the most susceptible trees. For this reason, I would recommend roguing-out of the most susceptible trees in conjunction with a spray program starting in late May. Swiss Needle Cast is building in these plantations.

1983 PEST CONDITIONS REPORT WORK SHEET (MAINE)

PEST: (COMMON NAME) Rhizosphaera Needle Cast
(SPECIFIC NAME) *Rhizosphaera kalkhoffii*

HOST: Blue, white, and Norway spruce

PRESENT CONDITION: Moderate on a rare, isolated, individual tree.

AREA: Scattered individual trees

LOCATION: Central, Western, Eastern, and Southern Maine.

SEVERITY: (SPECIFIC MEASUREMENTS OR ESTIMATES) Moderate

LOSSES: (BEST ESTIMATES OF VOLUME AND/OR $) A very occasional white or blue spruce destined for the Christmas tree trade affected. Total loss probably under $200.

TREND: Down

PAST TO PRESENT: Heavy to severe on many scattered, susceptible trees in 1982, but of rare occurrence in 1983 despite apparent conditions favorable for spread; i.e., cool, moist spring.

FUTURE: Very cyclic, but apparently a downward trend in the immediate future.

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, RESULTS) None

COMMENTS: Two Christmas tree growers had severe outbreaks in 1982 on isolated trees. The problem did not increase in 1983 and actually decreased despite lack of fungicidal application, sanitation, and despite apparent weather conditions favorable for infection and buildup.

1983 PEST CONDITIONS REPORT WORK SHEET (MAINE)

PEST: (COMMON NAME) Scleroderris Canker
(SPECIFIC NAME) *Gremmeniella abietina*

HOST: Red Pine (Norway Pine)

PRESENT CONDITION: Stabilized on four existing sites.

AREA: 40+ acres

LOCATION: T19 MD (Washington Co.), Aurora (Hancock Co.), Coplin Plt., and Eustis (Franklin Co.)

SEVERITY: (SPECIFIC MEASUREMENTS OR ESTIMATES) Only latent infections missed in 1982 sanitation operations showed up in 1983; i.e. only an occasional flagging branch.

LOSSES: (BEST ESTIMATES OF VOLUME AND/OR $) Less than a dozen seedlings and saplings; no pole-sized or mature size classes.

TREND: Decrease

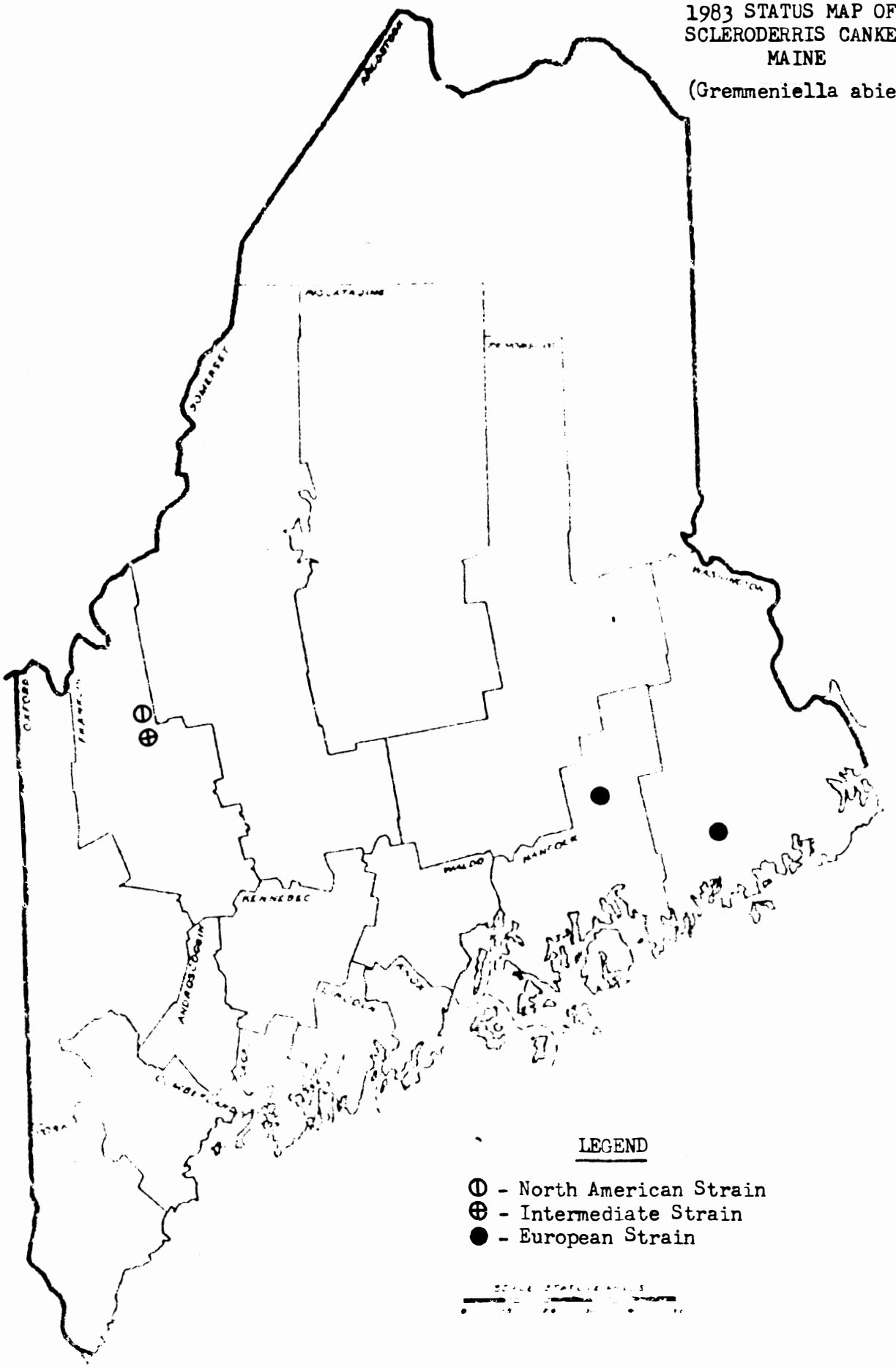
PAST TO PRESENT: Four sites since 1978; none in 1983 (all sites sanitized)

FUTURE: Expect only occasional branch or seedling mortality providing there is regionwide sanitation effort.

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, RESULTS) All four infection sites are surveyed and re-sanitized when needed. Results of sanitation have been excellent. Survey of plantations adjacent to the infection sites met with negative results.

COMMENTS: Sanitation effort in 1983 was accomplished at all four sites, and only minimal pruning of probable 1982 latent infections was necessary. Pruning was done with pole saws and snap-cuts, allowing severed branches to fall to the ground without further treatment. Trees from which symptomatic branches pruned were flagged and will be given special attention next spring as candle growth commences.

MAINE


1983 STATUS MAP OF THE SCLERODERRIS CANKER IN MAINE
(Gremmeniella abietina)
SOMERSET
PENOBSCOT
KENNEBEC
ANDROSCOGGIN
LEGEND
- North American Strain
- Intermediate Strain
- European Strain

1983 PEST CONDITIONS REPORT WORK SHEET (MAINE)

PEST: (COMMON NAME) White Pine Blister Rust
(SPECIFIC NAME)

HOST: Eastern White Pine

PRESENT CONDITION: Stabilized in Maintenance and Greenline Areas

AREA: 86,913 acres were scouted, mapped, or evaluated. An additional 135 acres of Ribes concentrations were sprayed with Tordon 101-R.

LOCATION: Central, Southern, and Western Maine.

SEVERITY: (SPECIFIC MEASUREMENTS OR ESTIMATES) Variable, but up to approximately 12% infection in some unprotected plantations with abundant Ribes nearby.

LOSSES: (BEST ESTIMATES OF VOLUME AND OR $) 150,000 Bd. Ft./yr. of merchantible volume (1 merchantible-sized tree/yr./1,000 acres; 200 Bd. Ft./tree) plus undetermined volume of seedling, sapling, and pole-sized trees.

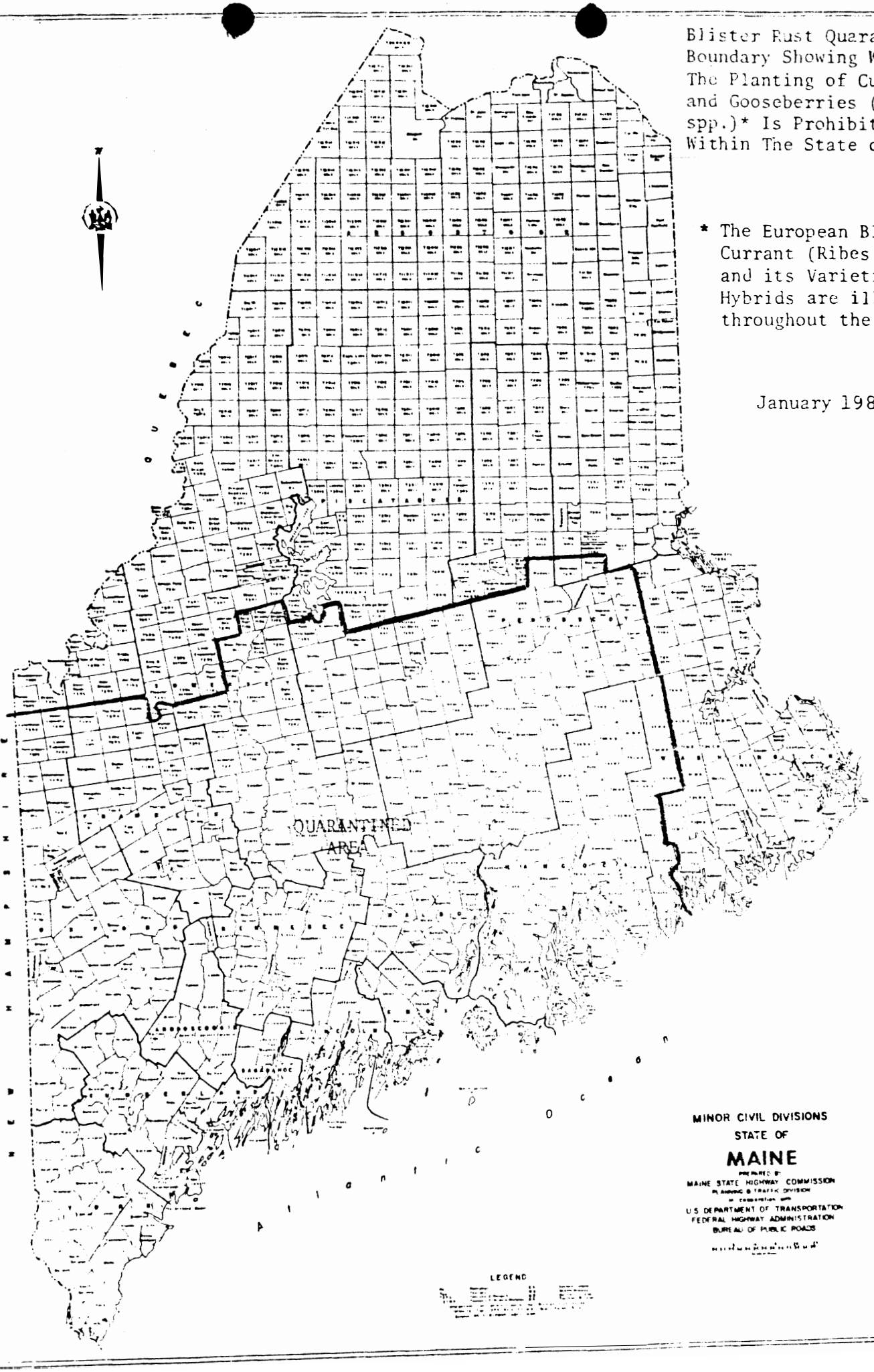
TREND: Increase due to expansion of rotation period.

PAST TO PRESENT: With loss of town funds and therefore cutting scout money in half, we have been unable to maintain a 10-year rotation. There has been no substantial immediate effect; i.e. no obvious increase in infection. Latent infections, however, are difficult to detect.

FUTURE: The long-range projection is obvious; i.e., an increase in infection, and a loss in reproduction of the type, the conifer species of highest economic value in the State.

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, RESULTS) One hundred and thirty-five acres of Ribes concentrations were controlled with Tordon 101-R with excellent results.

COMMENTS: With additional grants-to-cities-and-towns monies possibly made available, the rotation period could be brought down from the present 19 years to a practical 12 years and would allow the BRC program to function for its originally intended purpose; to protect white pine reproduction and therefore the future of the resource. The quarantine on Ribes is an integral and essential part of our overall program.



Blister Rust Quarantine Boundary Showing Where The Planting of Currants and Gooseberries (Ribes spp.)* Is Prohibited Within The State of Maine

* The European Black Currant (Ribes nigrum) and its Varieties or Hybrids are illegal throughout the State.

January 1981

1983 PEST CONDITIONS REPORT WORK SHEET (MAINE)

PEST: **(COMMON NAME)** Forest Tent Caterpillar
(SPECIFIC NAME) *Malacosoma disstria*

HOST: Primarily poplars. In southern areas oak, maple, beech, and birch also defoliated.

PRESENT CONDITION:

AREA: Approximately 348,000 acres defoliated.

LOCATION: All areas of the state except western border affected. Low numbers of caterpillars found statewide.

SEVERITY: **(SPECIFIC MEASUREMENTS OR ESTIMATES)** Light (≤ 30%) defoliation in northern and central Aroostook, northern Piscataquis, and northern Penobscot Counties. Moderate-heavy (≥ 30%) defoliation noted in southern Aroostook, eastern Penobscot, Hancock, and Washington Counties.

LOSSES: **(BEST ESTIMATES OF VOLUME AND/OR $)** No results yet on amount of loss. We are presently collecting data - crown decline, stem cankers, and mortality associated with the older areas of infestation.

TREND:

PAST TO PRESENT: Populations down from 1982 to 1983. Except for extreme eastern Washington County populations appear to be subsiding.

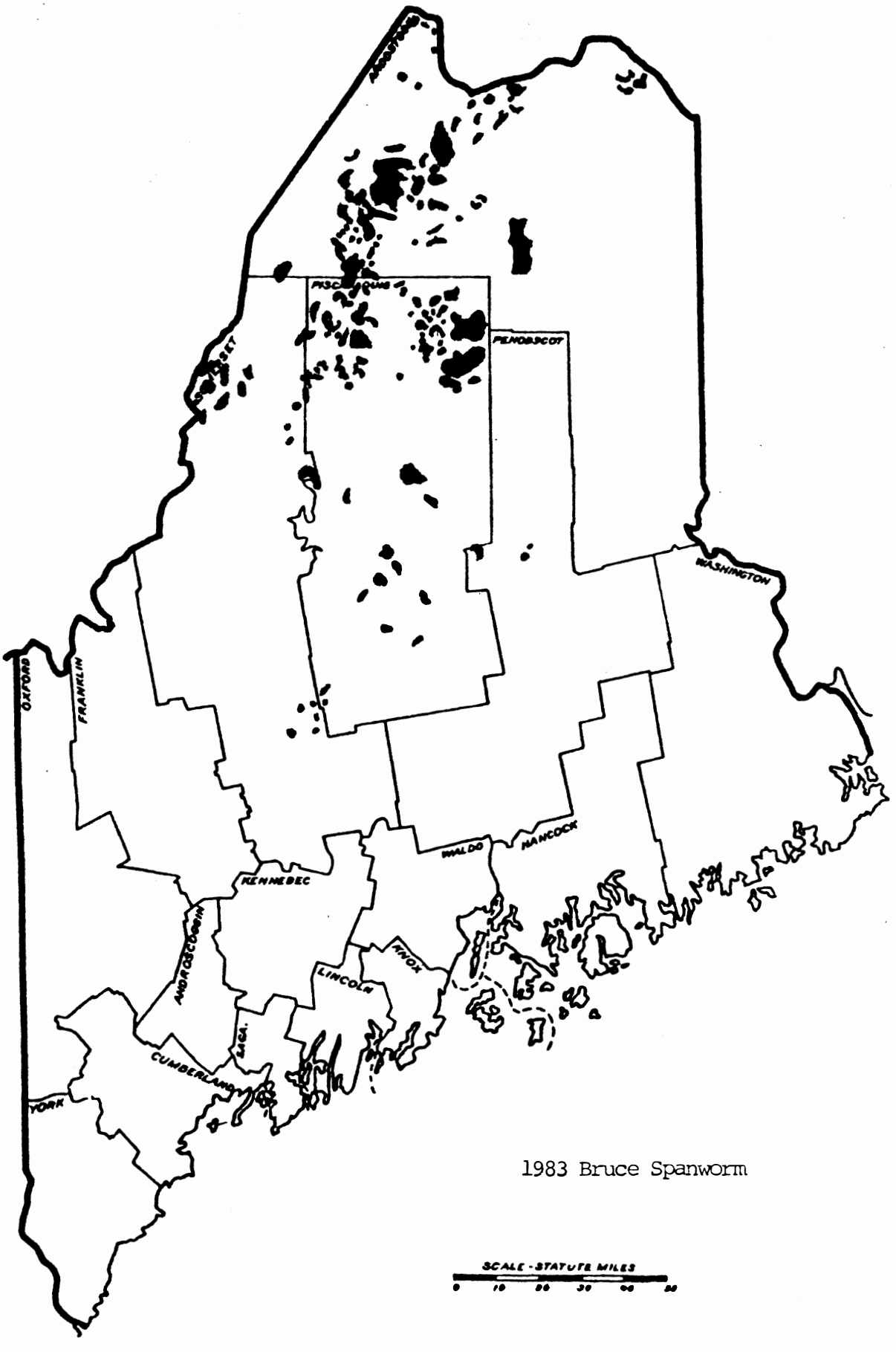
FUTURE: Expect continued decline of populations.

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, RESULTS) In eastern Washington County between 500-1,000 acres of poplar surrounding blueberry fields were treated by private landowners to lessen the risk of subsequent defoliation of blueberry plants by migrating caterpillars. The area was treated with Bt (4BIU & sticker/gallon/acre) applied once. Results: Populations were reduced from common to scarse in the treated strips. The remaining colonies were much smaller and insect development was retarded. Following treatment no defoliation accrued in the treated strips and there was no invasion into the fields.

COMMENTS:

Many local complaints about parasitic sarcophagid flies in the older areas of infestation.

MAINE


AROOSTOOK
PISCATAQUIS
PENOBSCOT
WASHINGTON
OXFORD
FRANKLIN
WALDO
HANCOCK
KENNEBEC
ANDROSCOGGIN
KNOX
LINCOLN
SAG.
CUMBERLAND
YORK
1983 Bruce Spanworm
SCALE - STATUTE MILES
0 10 20 30 40 50

1983 PEST CONDITIONS REPORT WORK SHEET (MAINE)

PEST: **(COMMON NAME)** Birch Casebearer
(SPECIFIC NAME) *Coleophora serratella*

HOST: Primarily white birch

PRESENT CONDITION:

AREA: Common and noticable on birch throughout northern 2/3 of the State. Heavy (≥ 60%) defoliation on approximately 193,000 acres in 1983.

LOCATION: Heavy defoliation in central Franklin and Somerset Counties. Spots of heavy defoliation in southern Piscataquis and Penobscot Counties.

SEVERITY: **(SPECIFIC MEASUREMENTS OR ESTIMATES)** Areas mapped had heavy (≥ 60%) defoliation.

LOSSES: **(BEST ESTIMATES OF VOLUME AND/OR $)** No data at this time.

TREND:

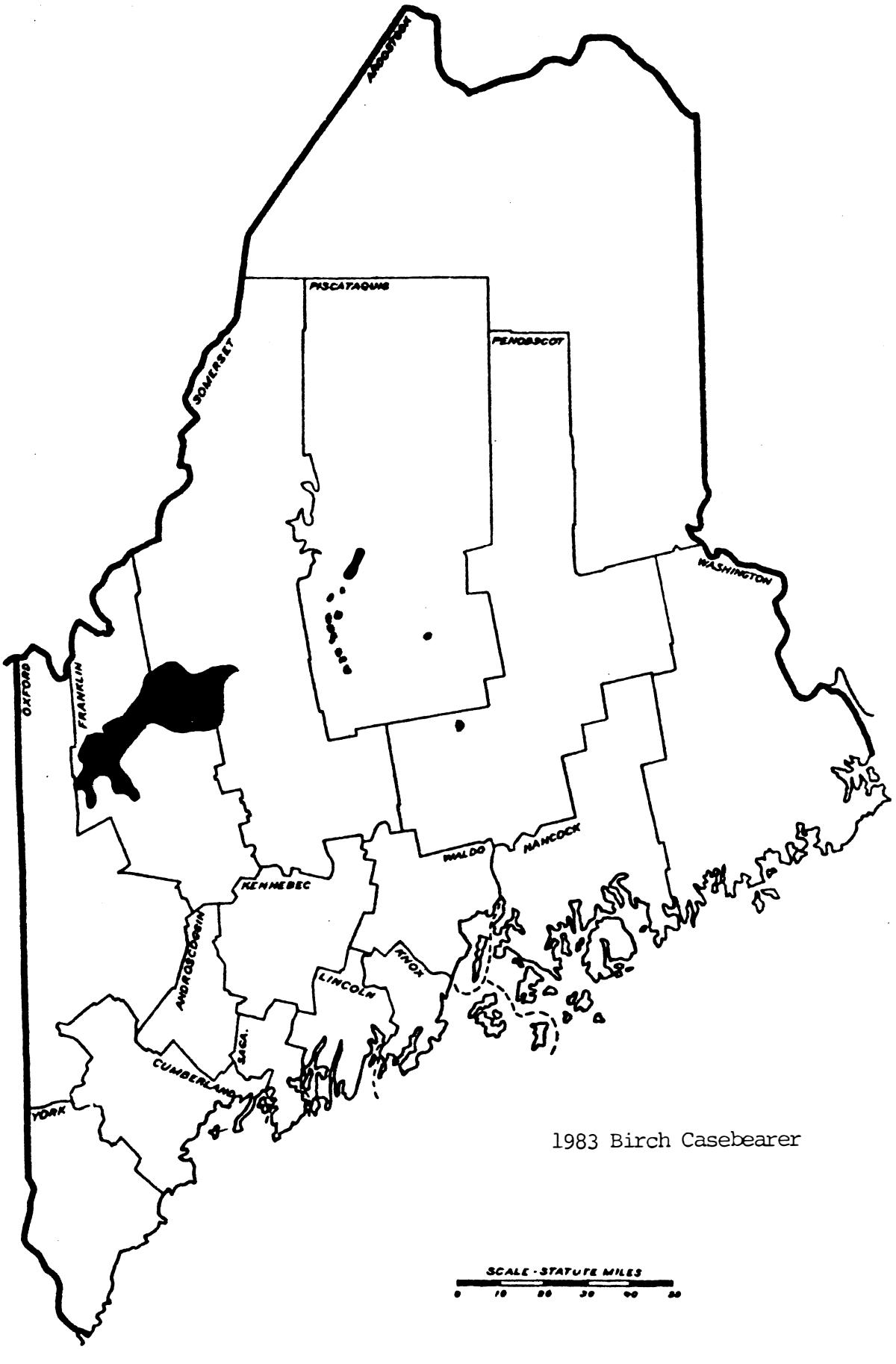
PAST TO PRESENT: Over most of the northern 2/3 of state populations are relatively static at light defoliation levels. In the mapped areas populations and damage increased markedly.

FUTURE: Surveys for 1984 population will be taken in winter - no prediction at this time.

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, RESULTS) None conducted or planned.

COMMENTS:

MAINE



1983 Birch Casebearer

1983 PEST CONDITIONS REPORT WORK SHEET (MAINE)

PEST: **(COMMON NAME)** Satin Moth
(SPECIFIC NAME) *Leucoma salicis*

HOST: Primarily poplar

PRESENT CONDITION:

AREA: 5,967 acres defoliated. Localized low level populations found scattered in southern 1/2 of State.

LOCATION: Jonesboro, Centerville, Whitneyville (Washington County) - 5,867 acres; T1R8 WELS (Penobscot County) - 100 acres

SEVERITY: **(SPECIFIC MEASUREMENTS OR ESTIMATES)** Areas mapped generally heavy (≥ 60%) defoliation.

LOSSES: **(BEST ESTIMATES OF VOLUME AND/OR $)** No assessment conducted. Big tooth aspen in defoliated areas thin topped with branch mortality common.

TREND:

PAST TO PRESENT: Acreage up from 1,172 acres in 1982 to 5,967 acres in 1983.

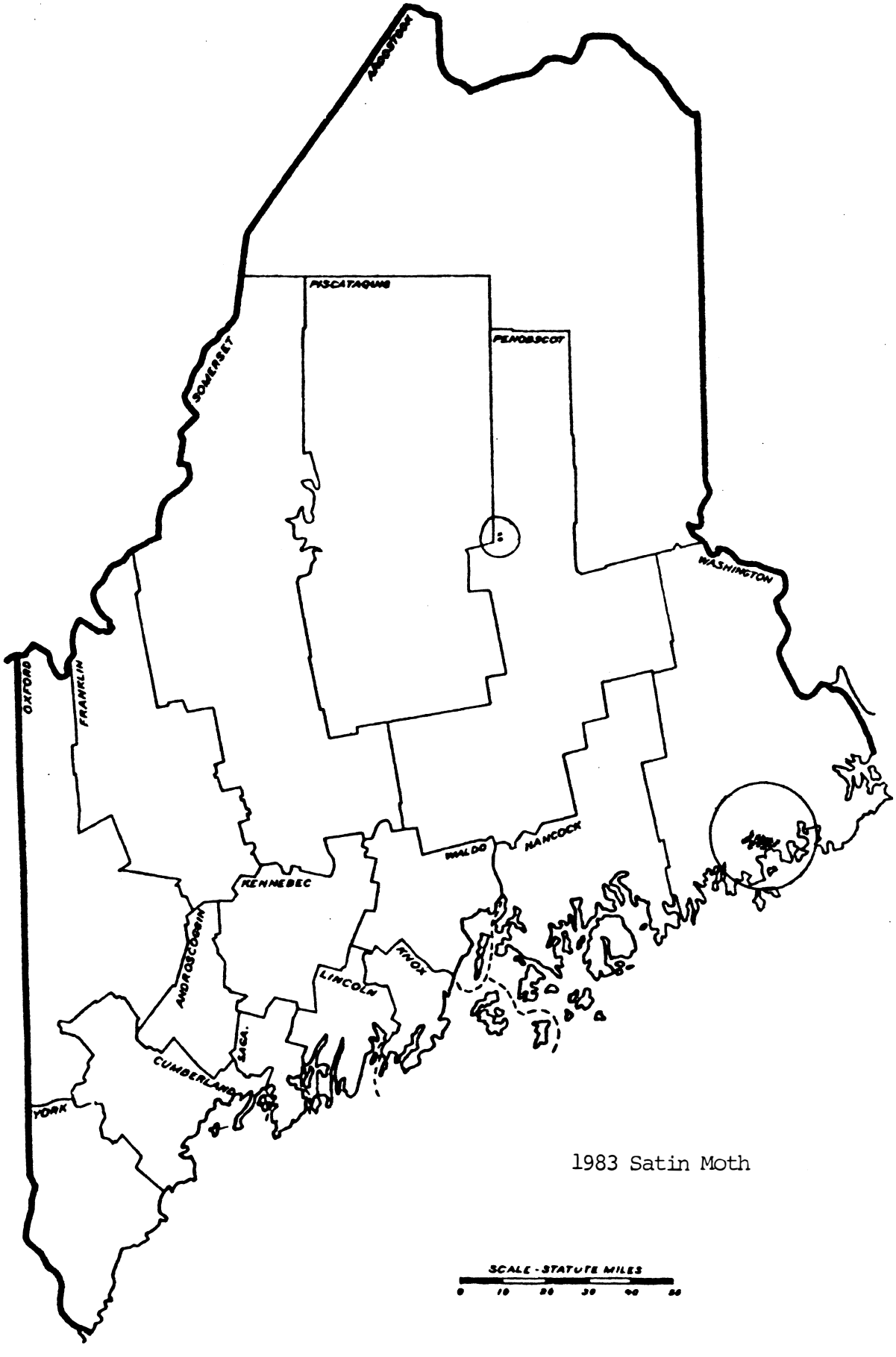
FUTURE: Expect decline - Dipterous parasitism was almost 40% by the end of the 1983 season. Egg mass density was less than anticipated from the larval/pupal density. By late summer hibernaculae were very difficult to find anywhere in the Washington Co. infestation.

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, RESULTS)

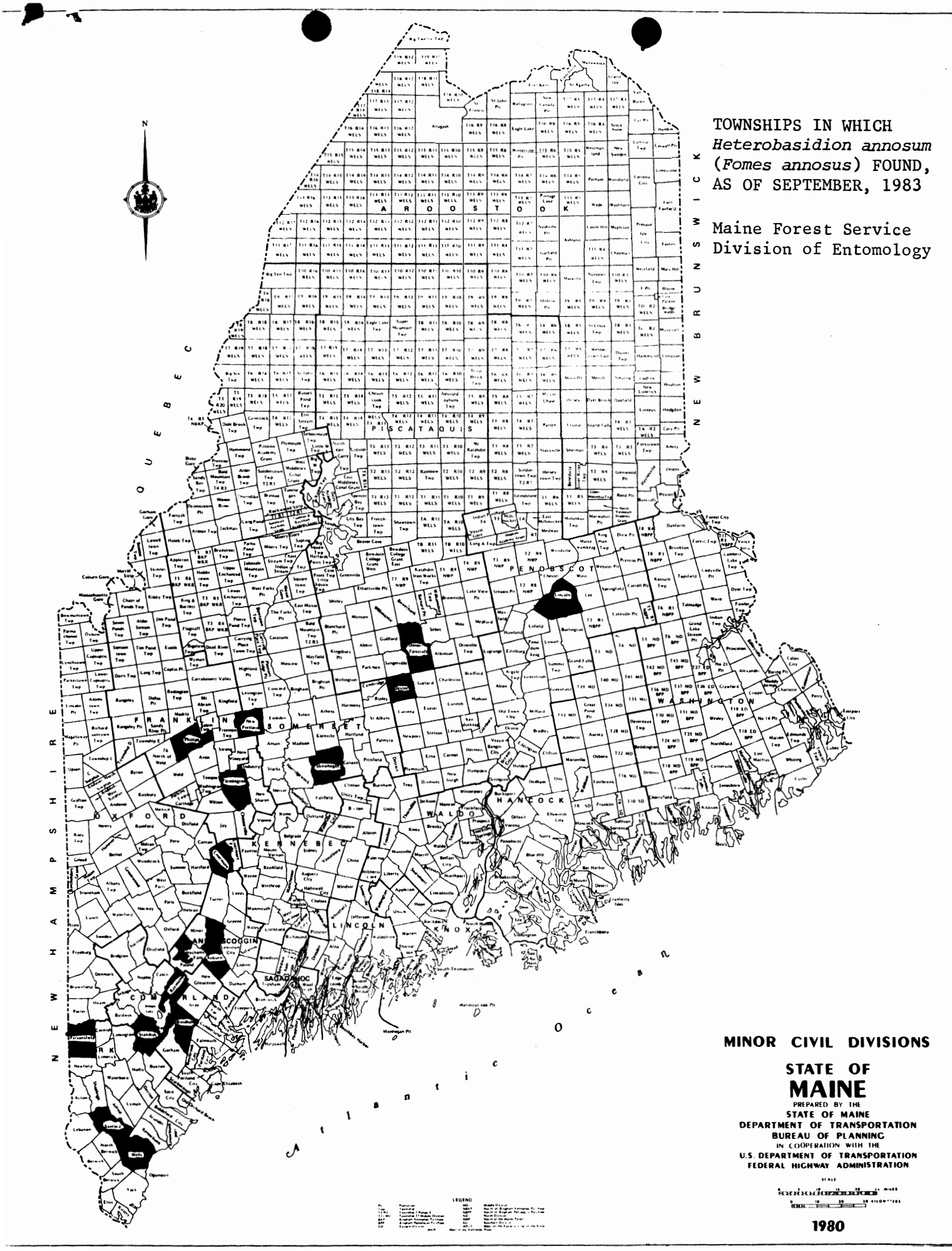
None conducted or planned.

COMMENTS: The population decline is not completely understood but was not due entirely to parasitism levels.

MAINE



1983 Satin Moth


TOWNSHIPS IN WHICH
Heterobasidion annosum
(Fomes annosus) FOUND,
AS OF SEPTEMBER, 1983
Maine Forest Service
Division of Entomology
MINOR CIVIL DIVISIONS
STATE OF
MAINE
PREPARED BY THE
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BUREAU OF PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
1980
QUEBEC
NEW BRUNSWICK
NEW HAMPSHIRE
Atlantic Ocean
AROOSTOOK
PISCATAQUIS
PENOBSCOT
WASHINGTON
HANCOCK
WALDO
KNOX
LINCOLN
SAGADAHOC
KENNEBEC
ANDROSCOGGIN
CUMBERLAND
YORK
OXFORD
FRANKLIN
SOMERSET

STATUS OF FOMES ROOT ROT - SEPT., 1983

TOWNSHIP	SPECIES*	STAND TYPE**
Auburn	R	P
Dexter	R	P
Dover-Foxcroft	R	P
Farmington	R	P
Lincoln	W	N
Livermore	R	P
Mechanic Falls	R,W	P
New Portland	R	P
Parsonsfield	R,W	P
Phillips	N	P
Sanford	R	P
Skowhegan	W	P
Standish	R,W	P
Wells	R	N
Windham-Raymond	N	P

N = Norway Spruce
* R = Red Pine
W = White Pine

** N = Natural
P = Plantation

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United States Department of Agriculture
Forest Service
Northeastern Area, State and Private Forestry
Louis C. Wyman Forestry Sciences Laboratory
P.O. Box 640, Durham, NH 03824

Reply to: 3440

Date: May 25, 1983

Clark Granger
Director State Entomologist
Maine Forest Service
State Office Building #22
Augusta, ME 04333

Dear Clark:

We would appreciate your reporting gypsy moth defoliation on state and private lands in your state for 1983.

Defoliation data.

Defoliation Class	Acres
Moderate (30-59%)	4574
Heavy (60-100%)	11711
	16,285 total

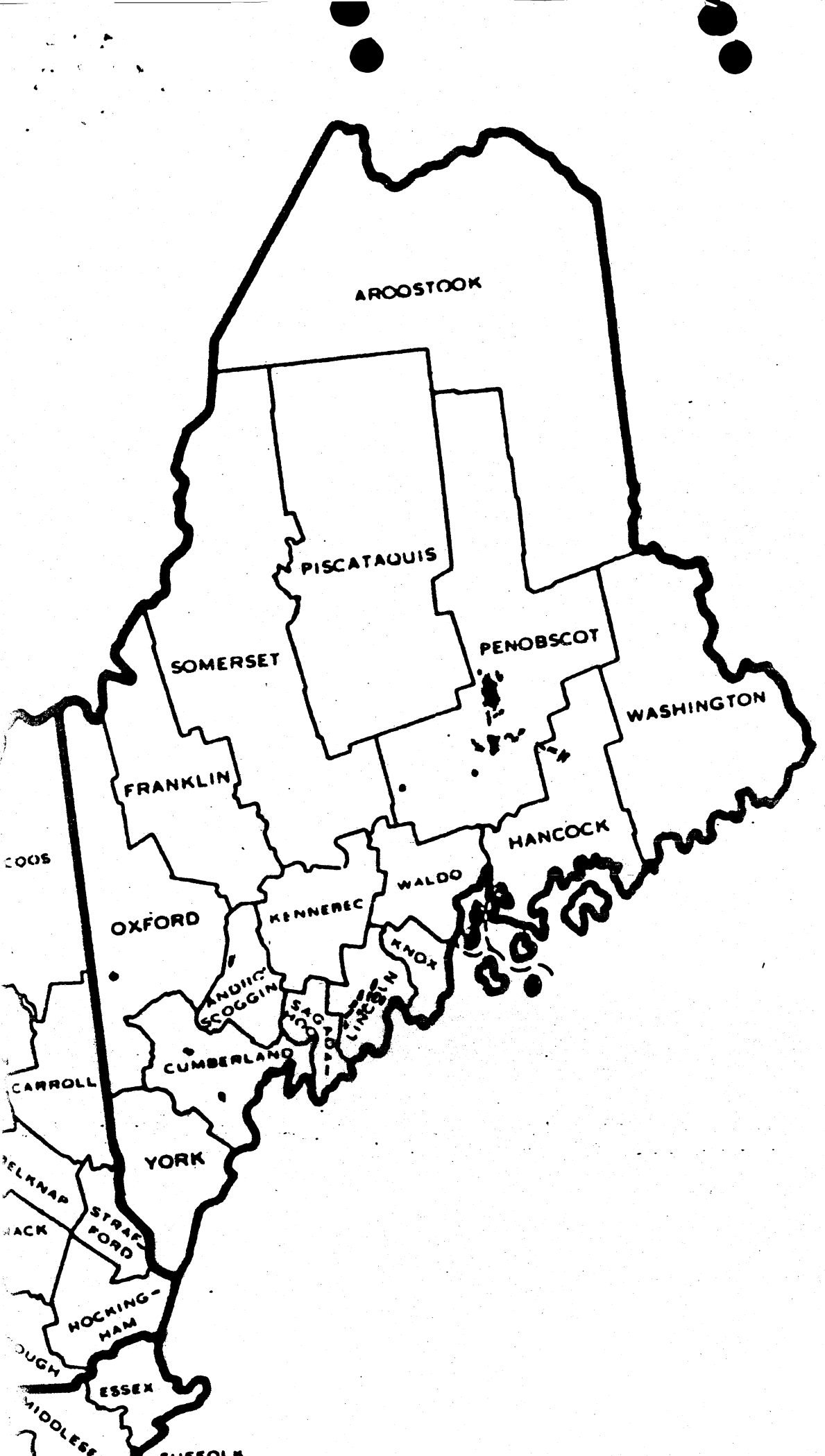
Defoliation map. Please show the areas of defoliation on the enclosed map. Do not distinguish between areas of moderate and heavy defoliation and do not include areas with light defoliation (less than 30 percent). Provide as much detail as shown on the enclosed example from Pennsylvania.

The data and map should be sent to Margaret Miller-Weeks at this office by August 15 for use in a National summary report. We appreciate your cooperation. If you have any questions, please contact Margaret or Imants Millers.

Mel Weiss

MELVYN J. WEISS
Field Representative
Forest Pest Management

Enclosure


AROOSTOOK
PISCATAQUIS
SOMERSET
PENOBSCOT
WASHINGTON
FRANKLIN
HANCOCK
COOS
WALDO
OXFORD
KENNEBEC
KNOX
ANDRO-SCOGGIN
SAGADA-HOC
LINCOLN
CUMBERLAND
CARROLL
YORK
ELKNAP
STRAF-FORD
ACK
HOCKING-HAM
OUGH
ESSEX
IDDLESE
SUFFOLK

1983 Maine SBW Data

Defoliation

4.0 million acres moderate to heavy

2.0 million acres light

Mortality

300,000 acres heavy (areas with greater than 50% of the fir dead)

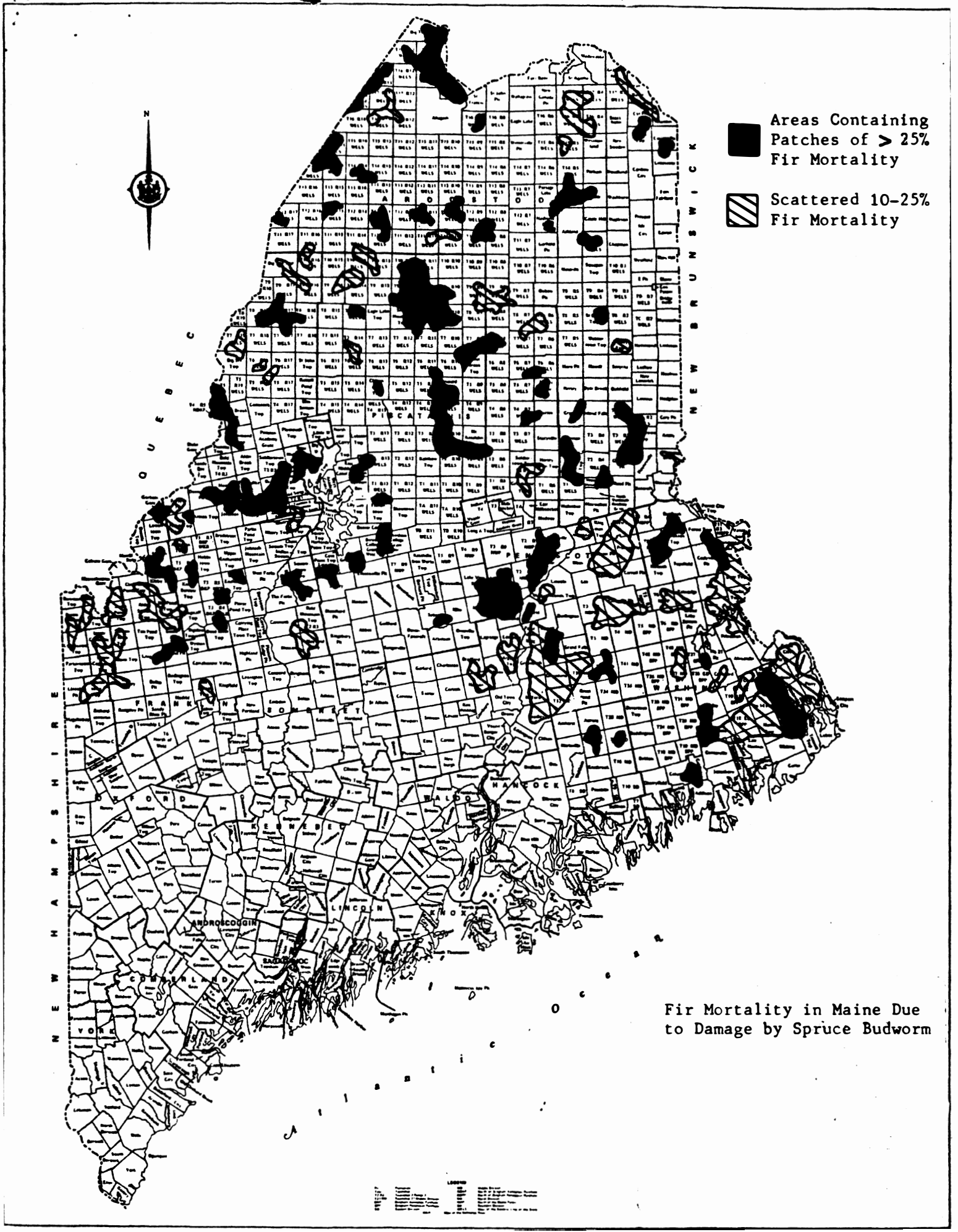
Hazard

4.4 million acres high to extreme

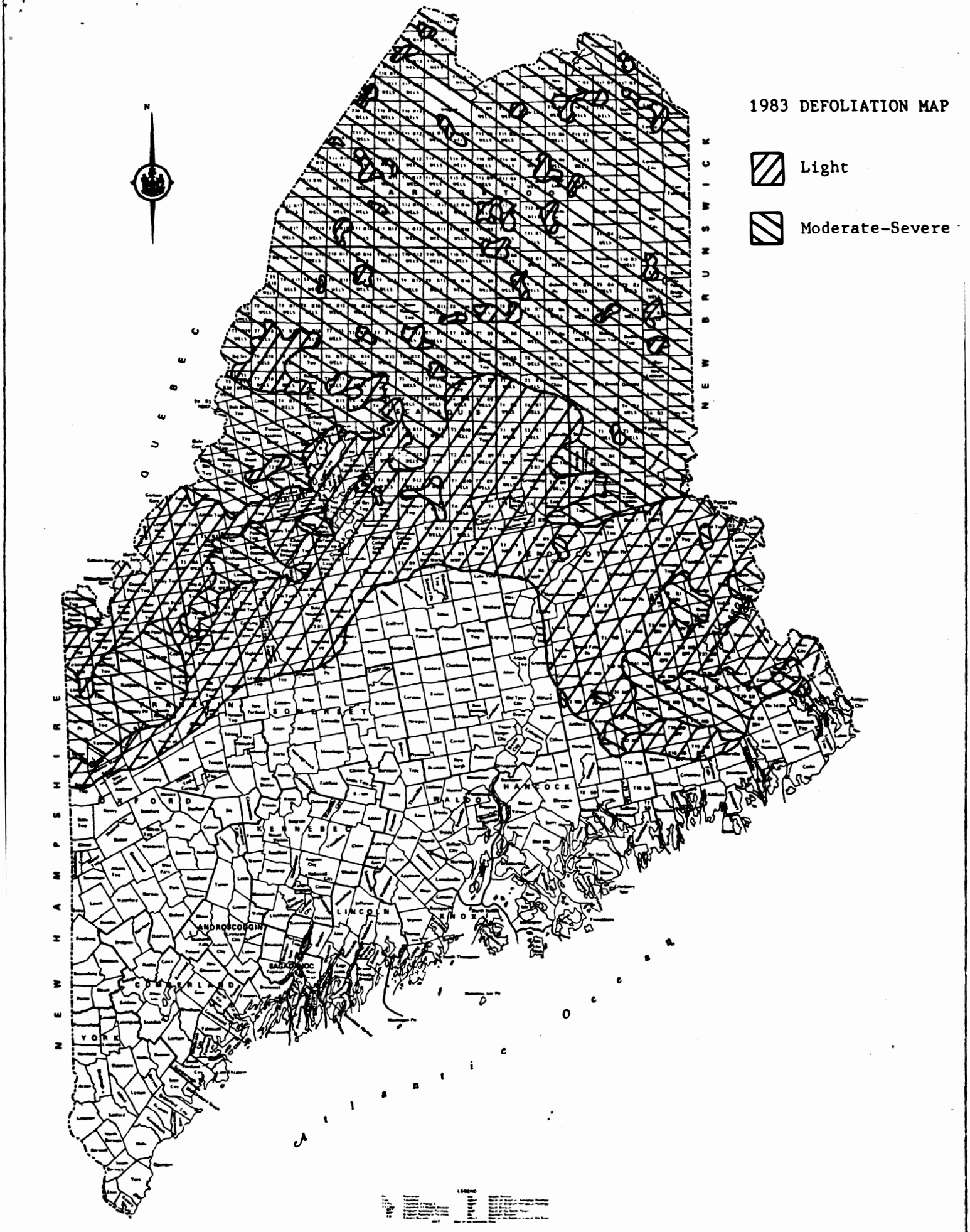
3.0 million acres low

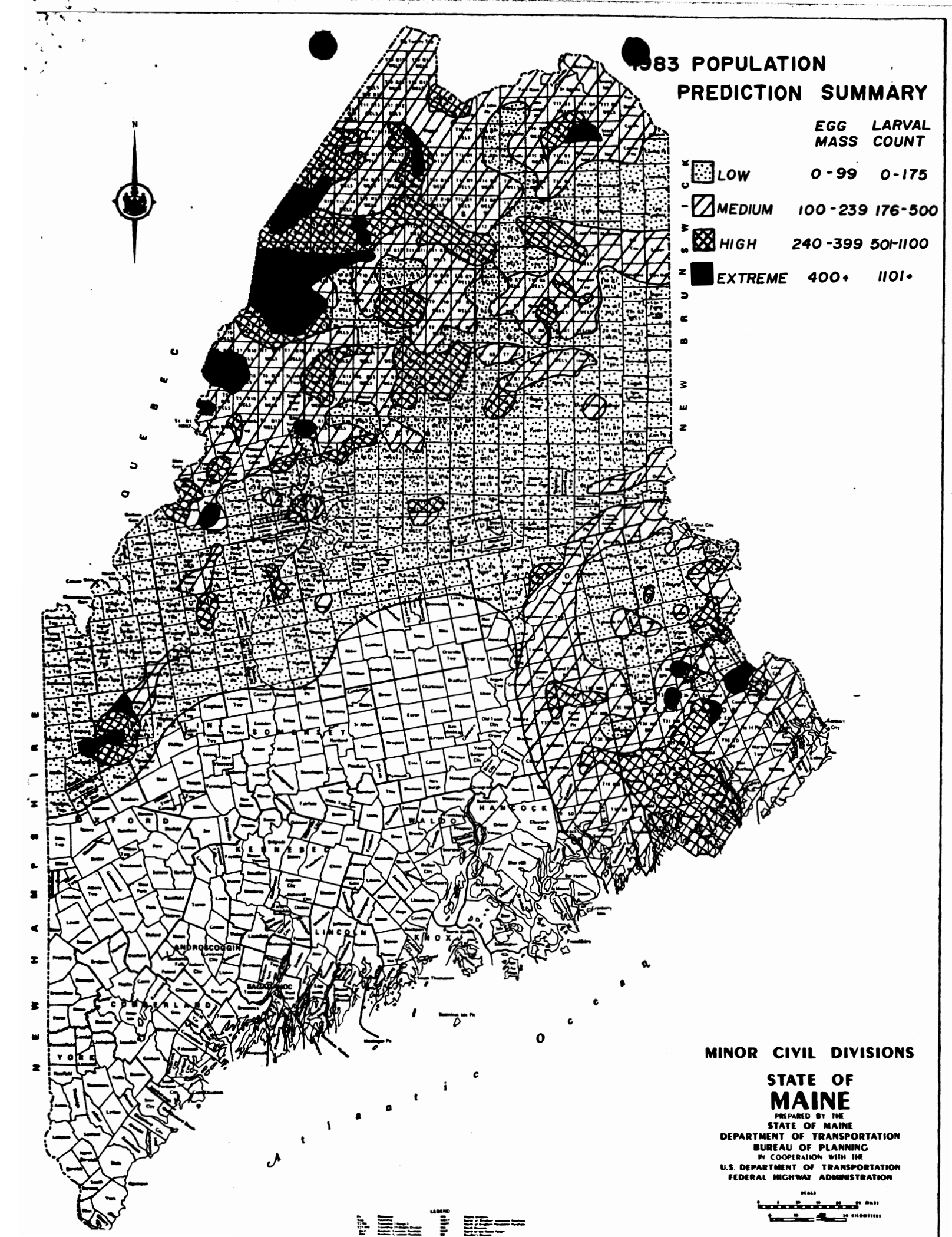
Trend

Defoliation next year is expected to be down. High to extreme population levels are predicted on 3.0 million acres for 1984, compared with 4.4 million acres in 1983.



Fir Mortality in Maine Due to Damage by Spruce Budworm


1983 DEFOLIATION MAP
Light
Moderate-Severe
N
QUEBEC
NEW BRUNSWICK
NEW HAMPSHIRE
ANDROSCOGGIN
CUMBERLAND
YORK
KENNEBEC
SOMERSET
PENOBSCOT
WALDO
HANCOCK
LINCOLN
KNOX
SAGADAHOC
Atlantic Ocean


1983 POPULATION
PREDICTION SUMMARY
EGG MASS
LARVAL COUNT
LOW 0-99 0-175
MEDIUM 100-239 176-500
HIGH 240-399 501-1100
EXTREME 400+ 1101+
N
QUEBEC
NEW BRUNSWICK
NEW HAMPSHIRE
ATLANTIC OCEAN
SOMERSET
PENOBSCOT
WALDO
HANCOCK
LINCOLN
KNOX
ANDROSCOGGIN
CUMBERLAND
YORK
MINOR CIVIL DIVISIONS
STATE OF
MAINE
PREPARED BY THE
STATE OF MAINE
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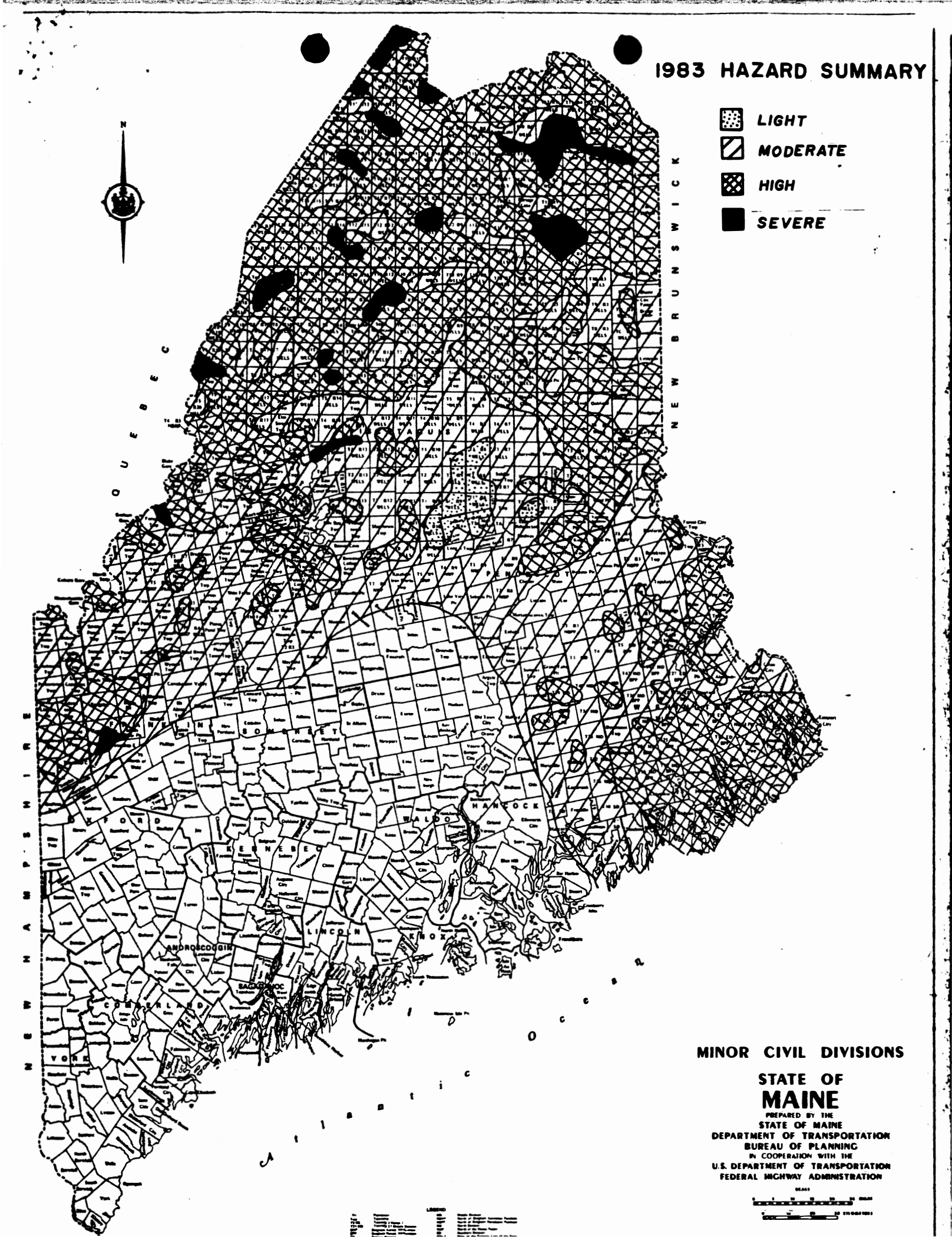
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
SCALE
LEGEND


1983 HAZARD SUMMARY
LIGHT
MODERATE
HIGH
SEVERE
N
QUEBEC
NEW BRUNSWICK
NEW HAMPSHIRE
ATLANTIC OCEAN
AROOSTOOK
PENOBSCOT
SOMERSET
FRANKLIN
OXFORD
KENNEBEC
WALDO
HANCOCK
LINCOLN
KNOX
ANDROSCOGGIN
CUMBERLAND
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U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

1983 PEST CONDITIONS REPORT WORK SHEET

PEST: (COMMON NAME) Spruce budworm on Indian lands in Maine
(SPECIFIC NAME) Choristoneura fumiferana (Clemens)

HOST: Fir, spruce, hemlock

PRESENT CONDITION:

AREA: Passamaquoddy - 21,509 acres of visible defoliation
Penobscot - 14,589 acres of visible defoliation

LOCATION: See attached map

SEVERITY: (SPECIFIC MEASUREMENTS OR ESTIMATES)
Some areas are showing severe damage due to repeated defoliation.

LOSSES: (BEST ESTIMATES OF VOLUME AND/OR $)
Tree mortality is expected to increase on unprotected lands and losses on protected lands should decrease. Past damage to fir is severe and protection is mainly geared to spruce and hemlock.

TREND:

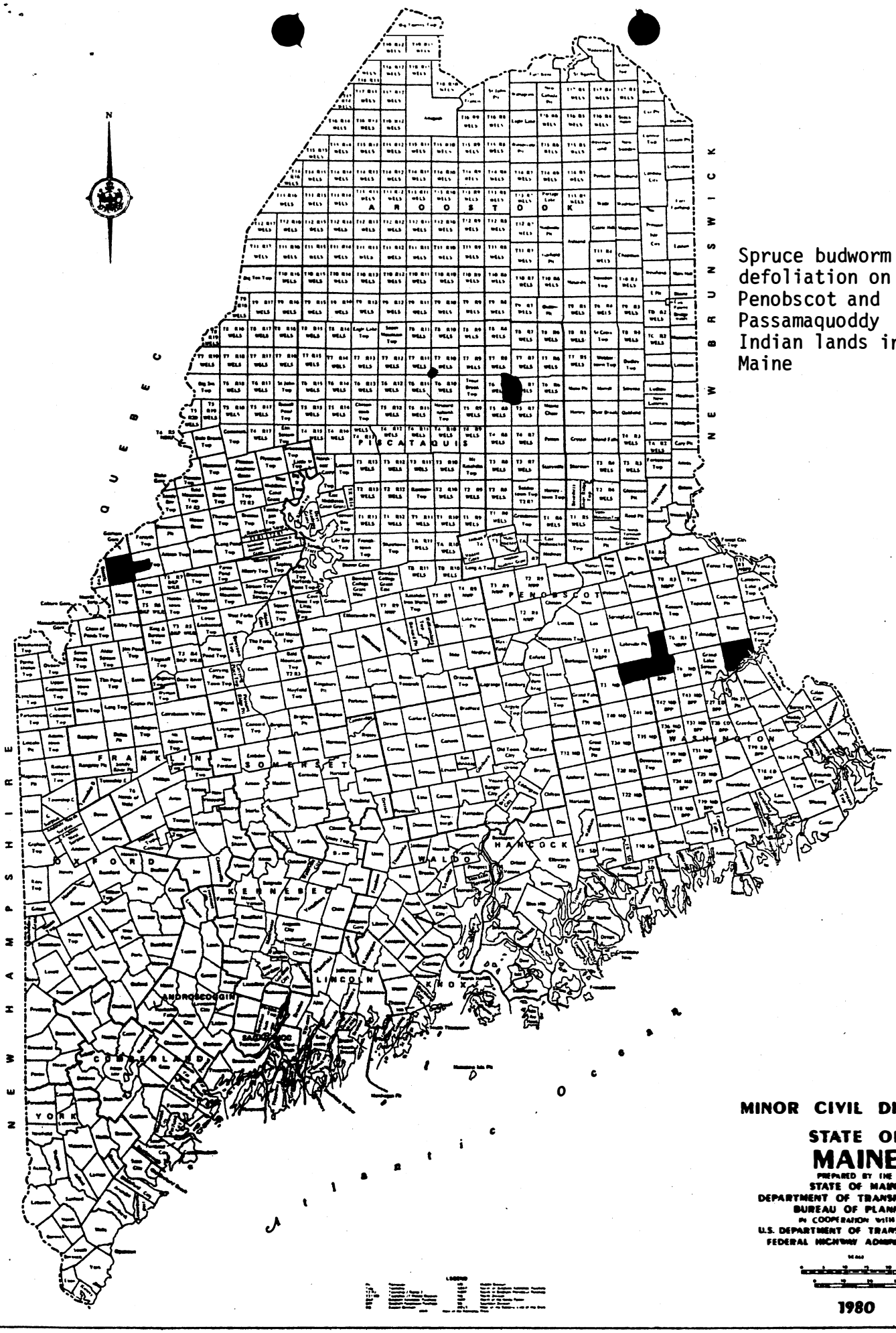
PAST TO PRESENT: Defoliation on the Passamaquoddy lands has decreased from 46,000 acres in 1982. Defoliation on the Penobscot lands has increased from 6500 acres in 1982.

FUTURE: On the Passamaquoddy lands, which were sprayed, moderate populations are expected next year. On the Penobscot lands local areas of high populations are expected.

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, RESULTS)

The Passamaquoddy tribe treated 40,000 acres with Bt to protect 35 million cu. ft. of spruce, fir, and hemlock. Defoliation on treated lands was negligible.

COMMENTS: Both the Passamaquoddy and Penobscot tribes have proposed treatment in 1984.


Spruce budworm defoliation on Penobscot and Passamaquoddy Indian lands in Maine
MINOR CIVIL DIVISIONS
STATE OF
MAINE
PREPARED BY THE
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BUREAU OF PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
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QUEBEC
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ATLANTIC OCEAN
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WASHINGTON
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WALDO
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LINCOLN
SAGADAHOC
ANDROSCOGGIN
CUMBERLAND
YORK
OXFORD
FRANKLIN
SOMERSET
KENNEBEC

1983 PEST CONDITIONS REPORT WORK SHEET

PEST: (COMMON NAME) Spruce budworm at Loring AFB
(SPECIFIC NAME) Choristoneura fumiferana (Clemens)

HOST: Spruce, fir

PRESENT CONDITION:

AREA: approximately 2500 acres

LOCATION: Loring AFB, Caribou, Maine

SEVERITY: (SPECIFIC MEASUREMENTS OR ESTIMATES)
Heavy defoliation noted throughout the area. Trees are in fair to very poor condition.

LOSSES: (BEST ESTIMATES OF VOLUME AND/OR $)
Scattered tree mortality is occurring

TREND:

PAST TO PRESENT: 1983 defoliation has increased over 1981 and 1982 when defoliation was rated as moderate.

FUTURE: High overwintering larval populations are expected. Heavy defoliation is expected again next year. Trees rated in high hazard or extreme high hazard for 1984.

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, RESULTS)

The AFB is planning a spray suppression project in 1984.

COMMENTS:

1983 PEST CONDITIONS REPORT WORK SHEET

PEST: (COMMON NAME) Gypsy moth defoliation on federal lands**
(SPECIFIC NAME) Lymantria dispar(L.)

HOST: Hardwoods

PRESENT CONDITION:

AREA: WMNF - 200 acres light defoliation
GMNF - 0 acres
Cape Cod Nat. Seashore - 3330 light to heavy defoliation
Sagamore Hill Hist. Site, NY - 81 acres moderate
(New London) Groton Naval Submarine Base, CT - 50 acres moderate

SEVERITY: (SPECIFIC MEASUREMENTS OR ESTIMATES)

Area wide defoliation was down from last year.

LOSSES: (BEST ESTIMATES OF VOLUME AND/OR $)

Some twig & branch dieback in areas previously defoliated.

TREND:

PAST TO PRESENT: WMNF down from 4700 acres in 1982
GMNF down from 3200 acres in 1982
Cape Cod, Sagamore Hill, Groton - down from 1982

FUTURE: Expect populations to be low for the next few years and therefore defoliation will be light.

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, RESULTS)

Sagamore Hill Nat. Hist. Site - approx. 4 acres sprayed with Bt
Groton (New London) Naval Sub. Base - 608 acres sprayed with Bt

COMMENTS:

**The defoliation totals were previously reported to your office with the state reports.

1983 PEST CONDITIONS REPORT WORK SHEET

PEST: (COMMON NAME) Browntail Moth**
(SPECIFIC NAME) Euproctis chrysorrhoca(L.)

HOST: beach plum, shadbush

PRESENT CONDITION:

AREA: 1800 acres defoliated

LOCATION: Cape Cod National Seashore

SEVERITY: (SPECIFIC MEASUREMENTS OR ESTIMATES)
Defoliation greatly increased over last year. Extensive branch and tree mortality in previously defoliated areas.

LOSSES: (BEST ESTIMATES OF VOLUME AND/OR $)

TREND:

PAST TO PRESENT: Increase of 800 acres over 1982.

FUTURE: Overwintering populations are expected to be high - therefore expect severe defoliation next year

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, RESULTS)

COMMENTS:

**See also Mass. state report.